

What is claimed is:

- sub-  
A1
- 10010955-11301
1. A device for cutting and fastening a section of tissue, comprising:
    - a first jaw;
    - a second jaw in opposed correspondence with the first jaw and adapted to retain one or more fasteners, the first and second jaws being movable in a non-rotational manner relative to one another between an open position and a closed position;
    - a wedge, disposed in an axially translating relation at the second jaw, the wedge including a blade and a sloped surface, such that during the selective axial translation of the wedge, the blade transects the section of tissue, and the sloped surface drives the fasteners through the tissue and toward the first jaw, thereby fastening the section;
    - a first rotatable shaft for effecting the relative movement of the first and second jaws between the open position and the closed position; and
    - a second rotatable shaft for driving the wedge member, the second rotatable shaft being rotatable independently of the first rotatable shaft.
  2. The device of claim 1, comprising a wedge guide integral with the second jaw, the wedge translating along the wedge guide.
  3. The device of claim 2,
    - wherein the wedge guide is linear and has a wall, and
    - wherein the wedge has an outer surface, and
    - wherein interaction between the outer surface and the wall prevents rotation of the wedge about the linear axis of the wedge guide, and
    - wherein the wedge has a threaded bore having a cylindrical axis coaxial with the linear axis of the wedge guide and having inner threads, and
    - wherein the second rotatable shaft comprises a threaded shaft having outer threads and extending along the wedge guide and having a cylindrical axis coaxial with the cylindrical axis of the bore, the inner threads of the bore mating with the outer threads of the threaded shaft, wherein a rotation of the threaded shaft about the

cylindrical axis of the bore causes the outer threads to ride along the inner threads, causing the wedge to travel along the shaft and along the wedge guide.

4. The device of claim 3,

wherein the wedge guide includes a linear channel having a cross-section, and wherein the wedge has a cross-section substantially matching the cross-section of the channel.

5. The device of claim 4,

wherein the first jaw has a first surface, and wherein the second jaw has a second surface in opposed correspondence to the first surface of the first jaw, and wherein each of the fasteners has a butt and at least one prong, and wherein the butt protrudes into the channel, and wherein each prong extends to the second surface of the second jaw, such that when the sloped surface of the wedge contacts each butt, each prong is pushed through the second surface of the second jaw, and such that when each prong is so pushed through the second surface of the second jaw, and the first surface of the first jaw and the second surface of the second jaw are substantially adjacent, each prong contacts the first surface of the first jaw.

6. The device of claim 5,

wherein one or more of the fasteners are staples, and wherein the first surface of the first jaw includes one or more staple guides corresponding to the prongs of the staples, each staple guide forming a pair of concave pockets adapted to receive the prongs of the staples and thereafter guide the prongs toward a bent closed position.

7. The device of claim 6,

comprising a removable staple tray housing the staples, and wherein the second surface of the second jaw is adapted to receive the removable staple tray.

8. The device of claim 3, wherein the threaded shaft has a proximal end mechanically communicating with a means for rotating the threaded shaft.

9. The device of claim 8, wherein the means is a motor.

10. The device of claim 9,

wherein the motor has a drive extension having a distal end, and

wherein the proximal end of the threaded shaft has a drive socket adapted to receive the distal end of the drive extension.

11. The device of claim 8,

wherein one of a clockwise rotation and a counter-clockwise rotation of the threaded shaft causes the wedge to travel away from the proximal end of the threaded shaft, and

wherein the other of the clockwise rotation and the counter-clockwise rotation of the threaded shaft causes the wedge to travel toward the proximal end of the threaded shaft.

12. The device of claim 3, wherein the threaded bore of the wedge is a threaded channel.

13. The device of claim 1, including a sensor for sensing when the first jaw is adjacent to the second jaw.

14. The device of claim 13,

wherein the sensor includes a first electrical contact on the first jaw and a second electrical contact on the second jaw, each of the first and second electrical contacts being in electrical communication with a proximity sensing circuit such that when the first and second electrical contacts are touching, the proximity sensing circuit is closed.

15. A device for cutting and fastening a section of tissue, comprising:  
a first jaw;  
a second jaw in opposed correspondence with the first jaw and adapted to retain one or more fasteners, the first and second jaws movable in a non-rotational manner relative to one another between an open position and a closed position for retaining the tissue therebetween;  
a blade for linearly cutting the section of tissue and a staple driver for driving the fasteners through the tissue and toward the first jaw; and  
a first rotatable shaft for effecting the relative movement of the first and second jaws between the open position and the closed position.
16. The device according to claim 15, comprising a second rotatable shaft for driving the blade.
17. The device according to claim 16, wherein the second rotatable shaft is adapted to drive the staple driver.
18. The device according to claim 16, comprising a first motor for driving the first rotatable shaft and a second motor for driving the second rotatable shaft.
19. The device according to claim 16, comprising a motor arrangement for driving each of the first rotatable shaft and the second rotatable shaft.
20. The device according to claim 16, wherein each of the first and second rotatable shafts includes a drive socket for engaging an end of a respective drive shaft.
21. The device according to claim 15, comprising a wedge disposed in an axially translating relation along the second jaw, the wedge including the blade and the staple driver, the wedge having a sloped surface, such that during selective axial translation of the wedge, the blade transects the section of tissue and the sloped surface drives the fasteners through the tissue toward the first jaw.

22. The device according to claim 15, wherein the second jaw includes a wedge guide and wherein the staple driver includes an axially translatable wedge adapted to translate along the wedge guide.

23. The device according to claim 15, wherein the first jaw and the second jaw are maintained in a substantially parallel relationship between the open position and the closed position.

24. A device for cutting and fastening a section of tissue, comprising:

a first jaw;

a second jaw in opposed correspondence with the first jaw and adapted to retain one or more fasteners, the first and second jaws being movable in a non-rotational manner relative to one another between an open position and a closed position for retaining the tissue therebetween;

a first rotatable shaft for driving the blade;

a blade for cutting the tissue along a path parallel to a plane containing the longitudinal axis of the first shaft; and

a staple driver for driving the fasteners through the tissue and toward the first jaw.

25. The device according to claim 24, comprising a second rotatable shaft for effecting the relative movement of the first and second jaws between the open position and the closed position.

26. The device according to claim 24, wherein the first rotatable shaft is adapted to drive the staple driver.

27. The device according to claim 24, comprising a wedge disposed in an axially translating relation along the second jaw, the wedge including the blade and the staple driver, the wedge having a sloped surface, such that during selective axial translation of the wedge, the blade transects the section of tissue and the sloped surface drives the fasteners through the tissue toward the first jaw.

28. The device according to claim 24, wherein the second jaw includes a wedge guide and wherein the staple driver includes an axially translatable wedge adapted to translate along the wedge guide.

29. The device according to claim 24, wherein the first jaw and the second jaw are maintained in a substantially parallel relationship between the open position and the closed position.

10010955-111301